FIG. 1

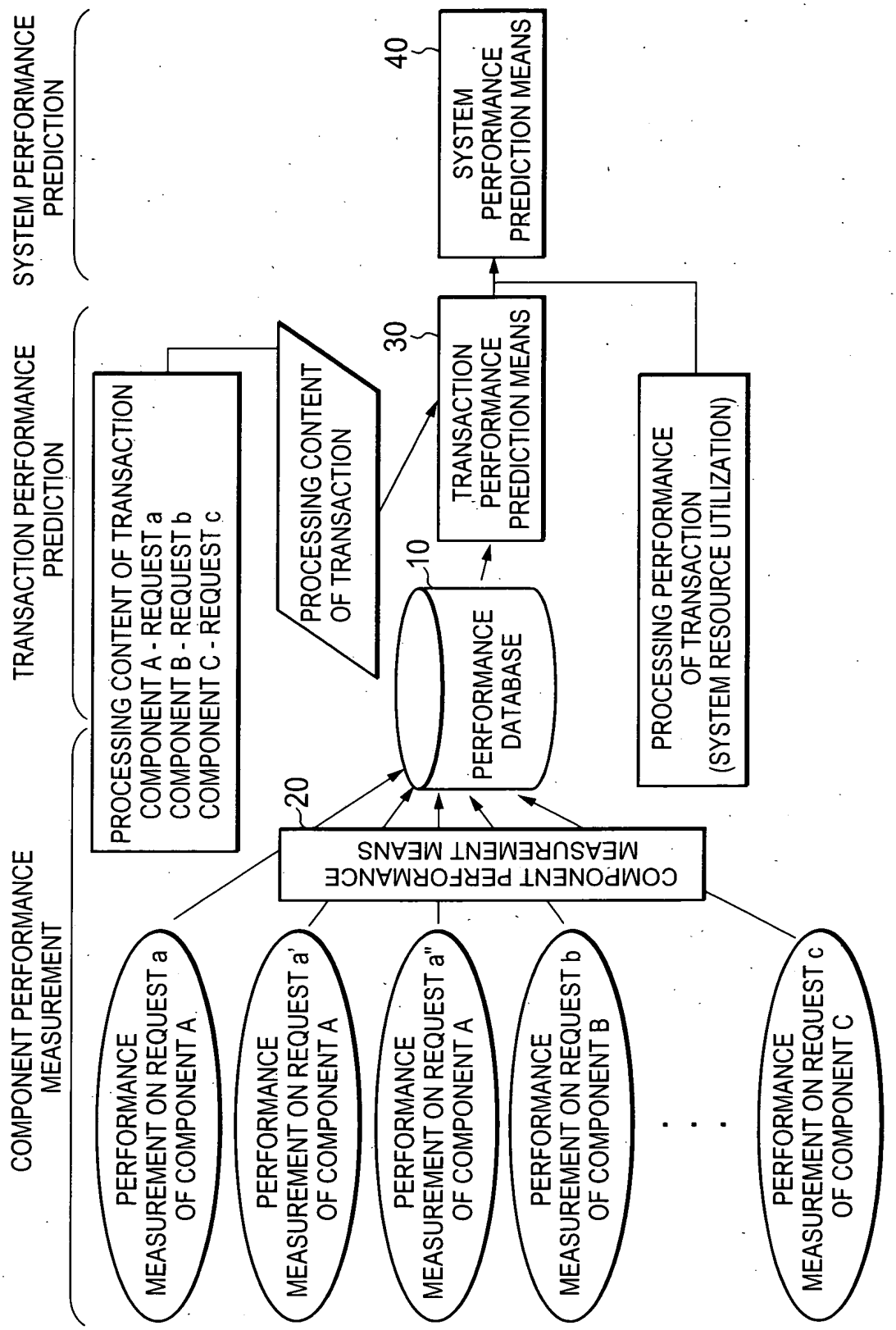

COMPONENT PERFORMANCE MEASUREMENT
TRANSACTION PERFORMANCE PREDICTION
SYSTEM PERFORMANCE PREDICTION
PERFORMANCE MEASUREMENT ON REQUEST a OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST a' OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST a" OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST b OF COMPONENT B
PERFORMANCE MEASUREMENT ON REQUEST c OF COMPONENT C
COMPONENT PERFORMANCE MEASUREMENT MEANS
20
PERFORMANCE DATABASE
10
PROCESSING CONTENT OF TRANSACTION
COMPONENT A - REQUEST a
COMPONENT B - REQUEST b
COMPONENT C - REQUEST c
PROCESSING CONTENT OF TRANSACTION
TRANSACTION PERFORMANCE PREDICTION MEANS
30
PROCESSING PERFORMANCE OF TRANSACTION (SYSTEM RESOURCE UTILIZATION)
SYSTEM PERFORMANCE PREDICTION MEANS
40

FIG. 2

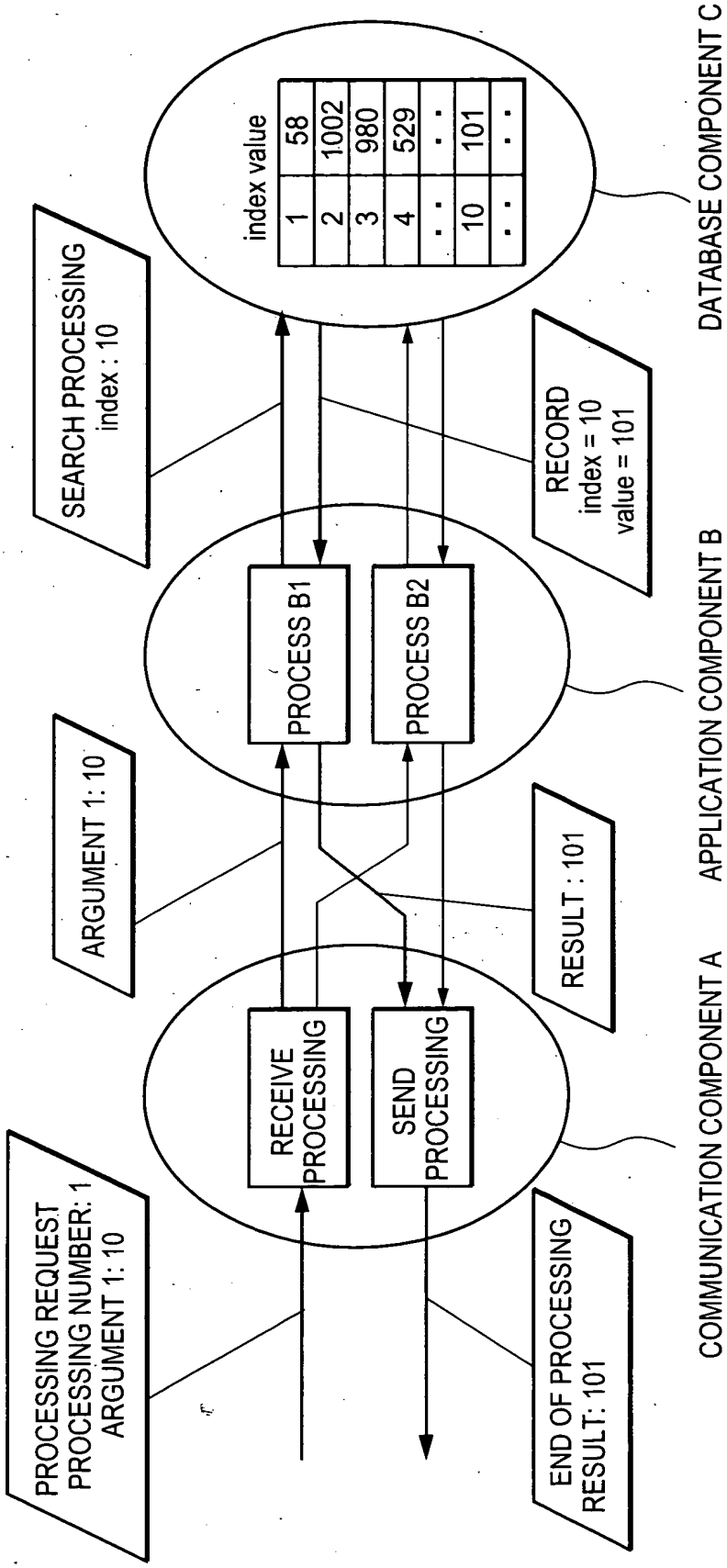

PROCESSING REQUEST
PROCESSING NUMBER: 1
ARGUMENT 1: 10
END OF PROCESSING
RESULT: 101
ARGUMENT 1: 10
RESULT : 101
SEARCH PROCESSING
index : 10
RECORD
index = 10
value = 101
RECEIVE PROCESSING
SEND PROCESSING
PROCESS B1
PROCESS B2
index value
1 58
2 1002
3 980
4 529
10 101
COMMUNICATION COMPONENT A
APPLICATION COMPONENT B
DATABASE COMPONENT C

FIG. 3

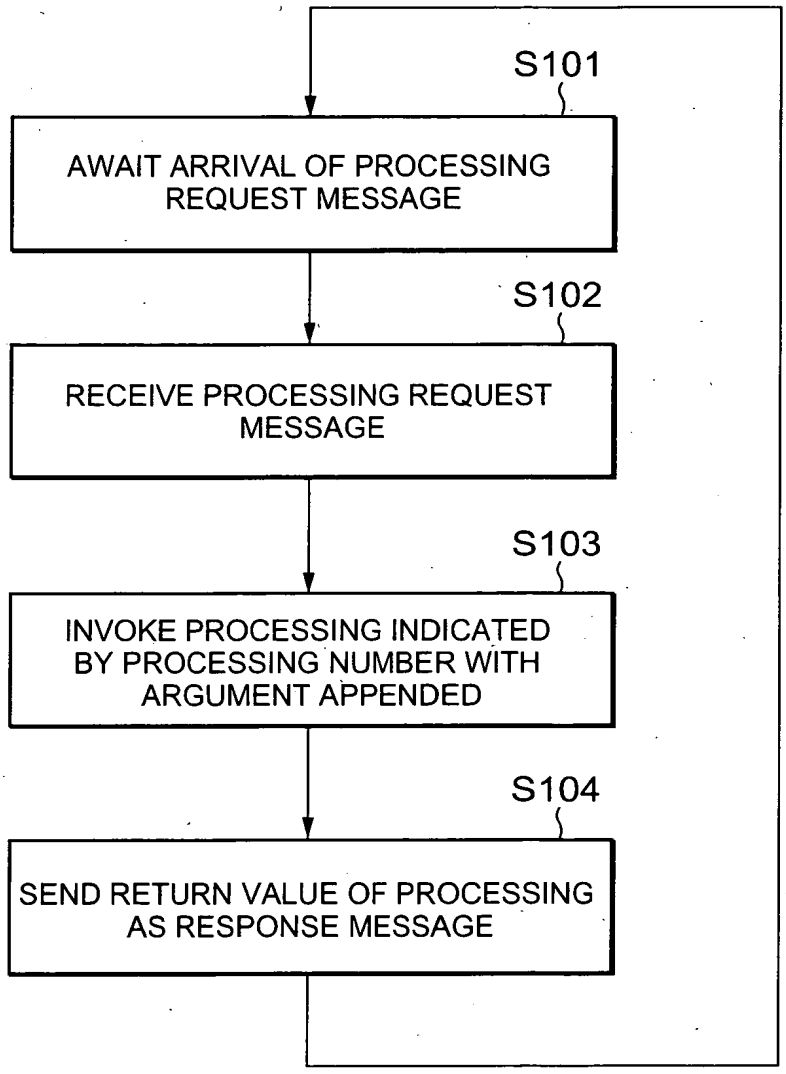

S101
AWAIT ARRIVAL OF PROCESSING REQUEST MESSAGE
S102
RECEIVE PROCESSING REQUEST MESSAGE
S103
INVOKE PROCESSING INDICATED BY PROCESSING NUMBER WITH ARGUMENT APPENDED
S104
SEND RETURN VALUE OF PROCESSING AS RESPONSE MESSAGE

FIG. 4A

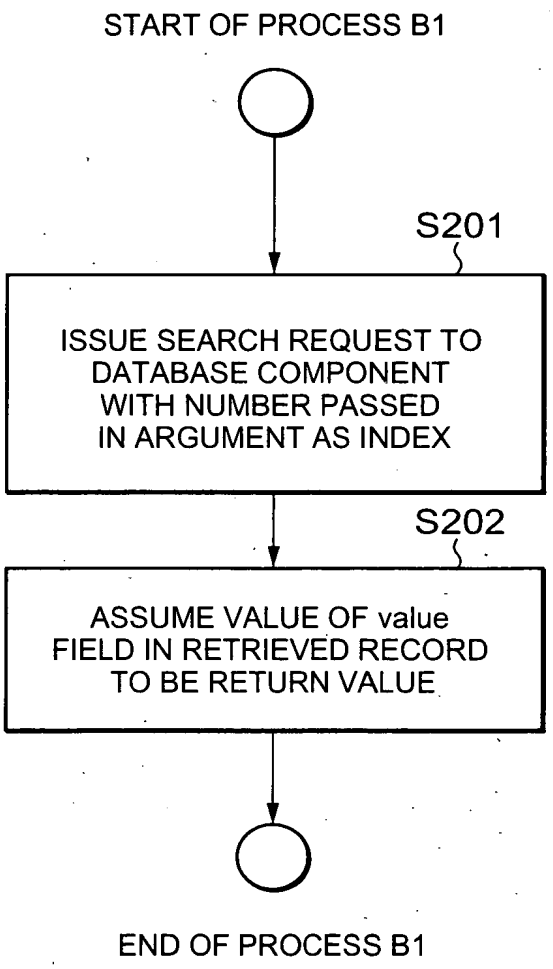

START OF PROCESS B1
S201
ISSUE SEARCH REQUEST TO DATABASE COMPONENT WITH NUMBER PASSED IN ARGUMENT AS INDEX
S202
ASSUME VALUE OF value FIELD IN RETRIEVED RECORD TO BE RETURN VALUE
END OF PROCESS B1

FIG. 4B

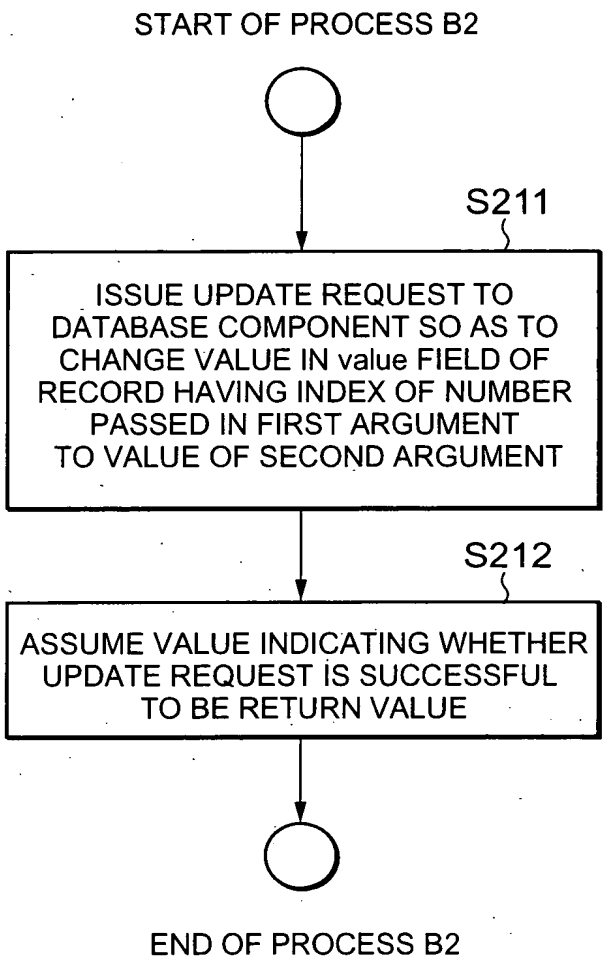

START OF PROCESS B2
S211
ISSUE UPDATE REQUEST TO DATABASE COMPONENT SO AS TO CHANGE VALUE IN value FIELD OF RECORD HAVING INDEX OF NUMBER PASSED IN FIRST ARGUMENT TO VALUE OF SECOND ARGUMENT
S212
ASSUME VALUE INDICATING WHETHER UPDATE REQUEST IS SUCCESSFUL TO BE RETURN VALUE
END OF PROCESS B2

FIG. 5

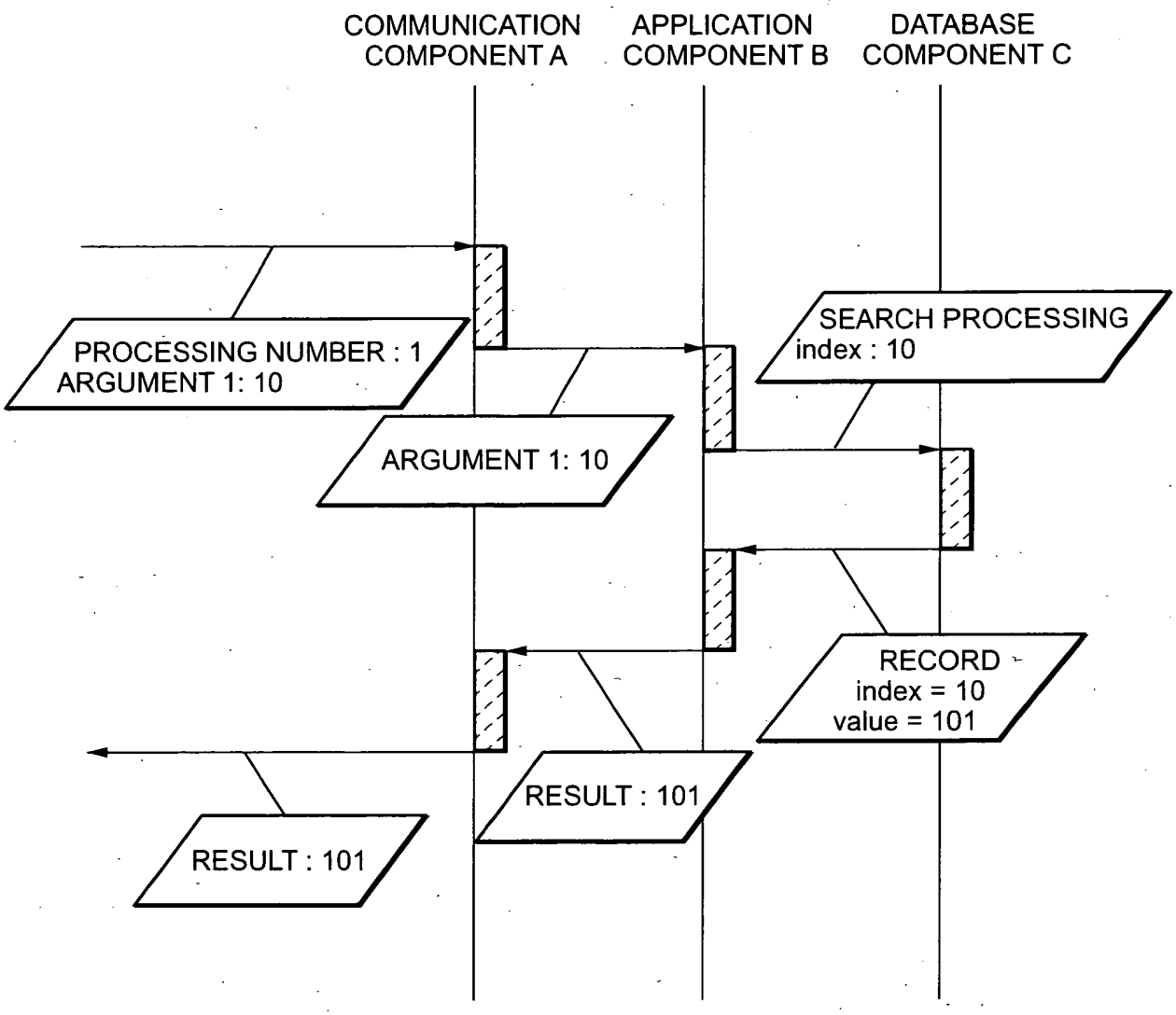

COMMUNICATION COMPONENT A
APPLICATION COMPONENT B
DATABASE COMPONENT C
PROCESSING NUMBER : 1
ARGUMENT 1: 10
ARGUMENT 1: 10
SEARCH PROCESSING
index : 10
RECORD
index = 10
value = 101
RESULT : 101
RESULT : 101

FIG. 6

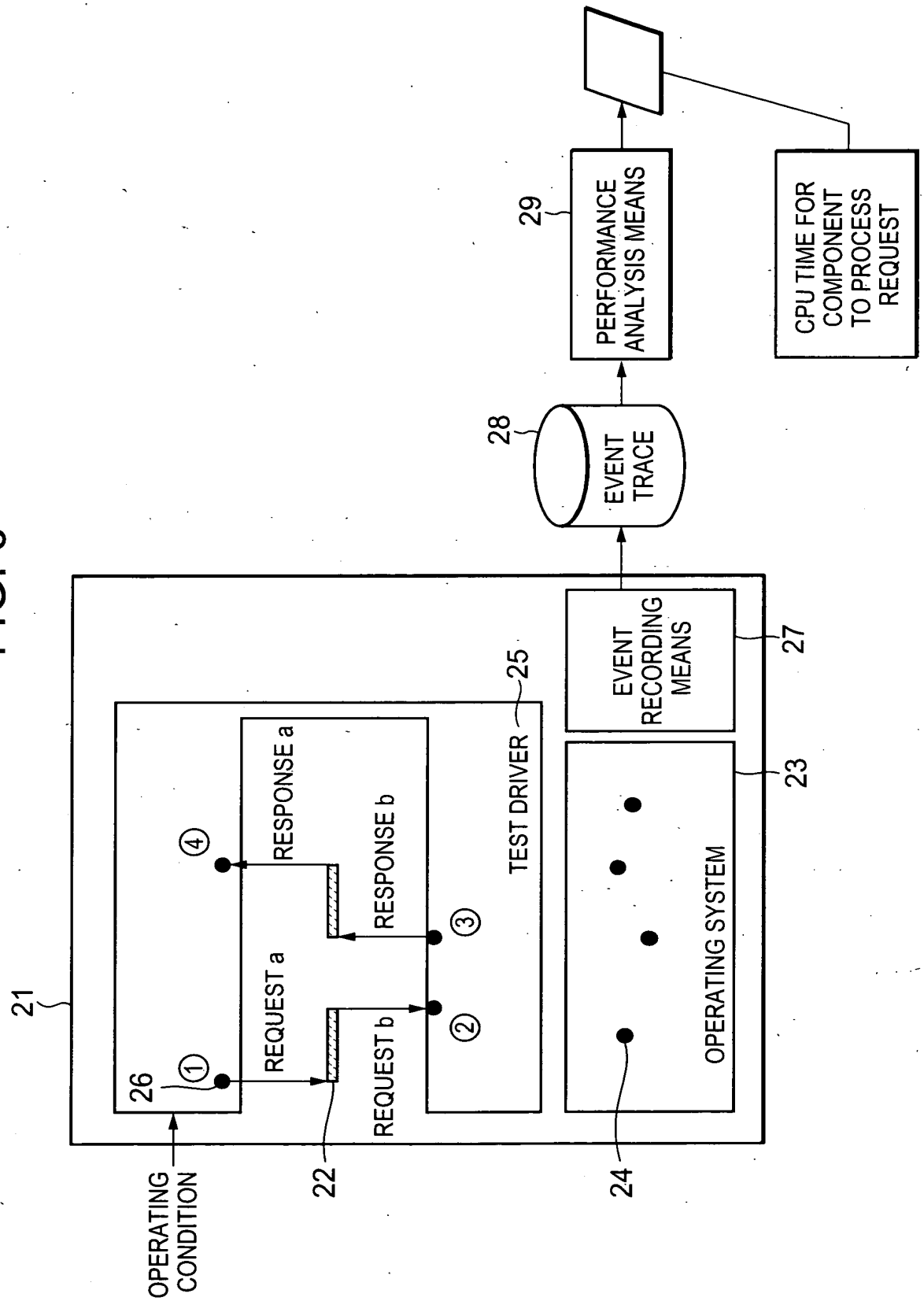

OPERATING CONDITION
21
22
24
26
REQUEST a
REQUEST b
RESPONSE a
RESPONSE b
①
②
③
④
TEST DRIVER
25
EVENT RECORDING MEANS
27
OPERATING SYSTEM
23
28
EVENT TRACE
29
PERFORMANCE ANALYSIS MEANS
CPU TIME FOR COMPONENT TO PROCESS REQUEST

FIG. 7

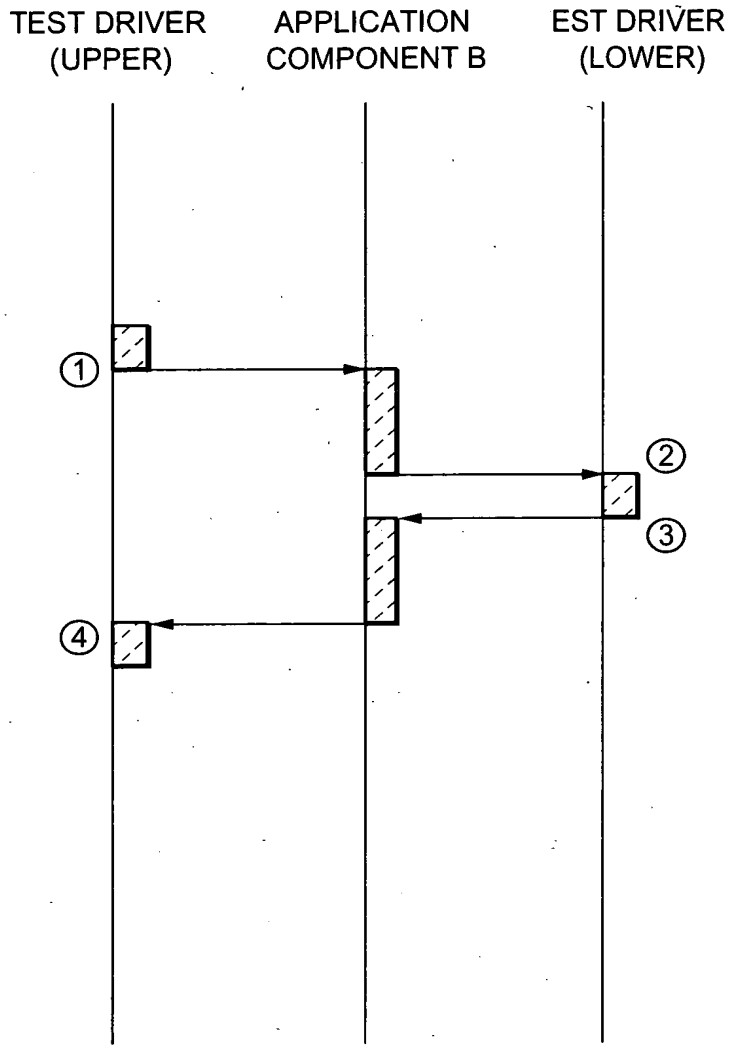
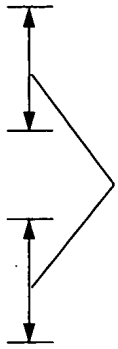

TEST DRIVER
(UPPER)
APPLICATION
COMPONENT B
EST DRIVER
(LOWER)
①
②
③
④

FIG. 8

TIME	EVENT
50	PROGRAM STARTS CPU OPERATION
100	EVENT ①DETECTED
150	PROGRAM STOPS CPU OPERATION
160	PROGRAM RESTARTS CPU OPERATION
200	EVENT ②DETECTED
250	PROGRAM STOPS CPU OPERATION
260	PROGRAM RESTARTS CPU OPERATION
300	EVENT ③DETECTED
400	PROGRAM STOPS CPU OPERATION
410	PROGRAM RESTARTS CPU OPERATION
500	EVENT ④DETECTED
550	PROGRAM ENDS CPU OPERATION



PERIOD OF TIME DURING WHICH MEASURED COMPONENT IS OPERATING

FIG. 9

COMMUNICATION COMPONENT A

OPERATING CONDITION	CPU TIME
ONE ARGUMENT	10
TWO ARGUMENTS	15

APPLICATION COMPONENT B

OPERATING CONDITION	CPU TIME
PROCESS B1	5
PROCESS B2	10

DATABASE COMPONENT C

OPERATING CONDITION	CPU TIME
SEARCH	50
UPDATE	70

FIG. 10

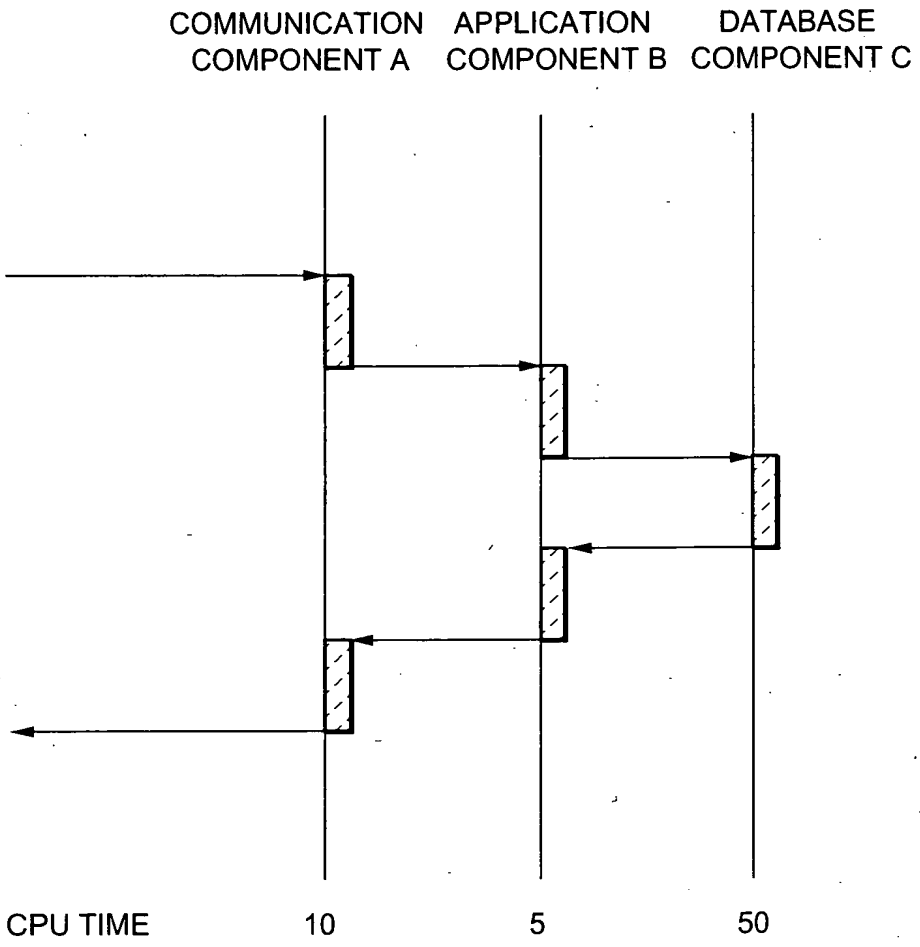

COMMUNICATION COMPONENT A
APPLICATION COMPONENT B
DATABASE COMPONENT C
CPU TIME
10
5
50

FIG. 11

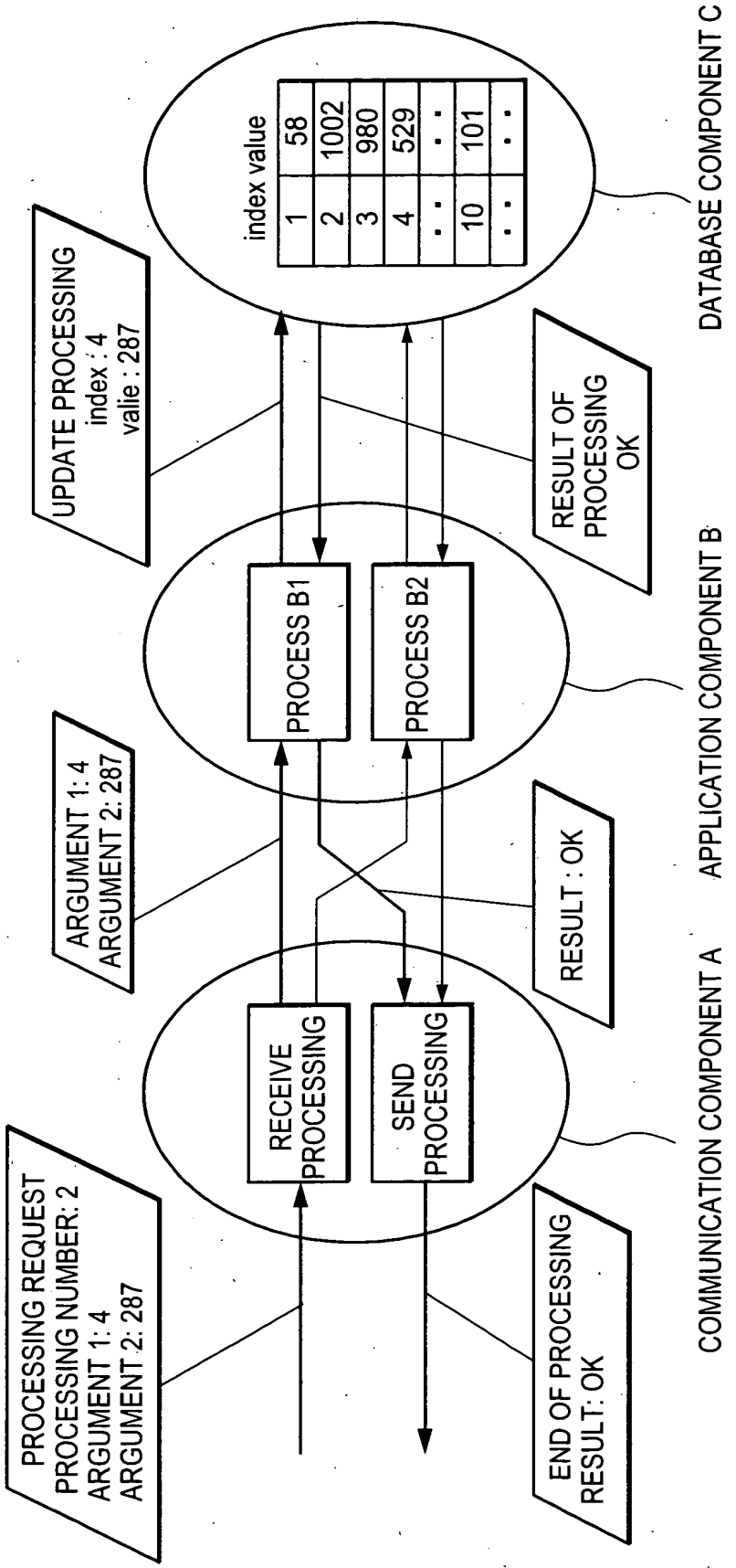

PROCESSING REQUEST
PROCESSING NUMBER: 2
ARGUMENT 1: 4
ARGUMENT 2: 287
ARGUMENT 1: 4
ARGUMENT 2: 287
UPDATE PROCESSING
index : 4
valie : 287
RESULT : OK
RESULT OF
PROCESSING
OK
END OF PROCESSING
RESULT: OK
RECEIVE
PROCESSING
SEND
PROCESSING
PROCESS B1
PROCESS B2
index value
1 58
2 1002
3 980
4 529
10 101
COMMUNICATION COMPONENT A
APPLICATION COMPONENT B
DATABASE COMPONENT C

FIG. 12

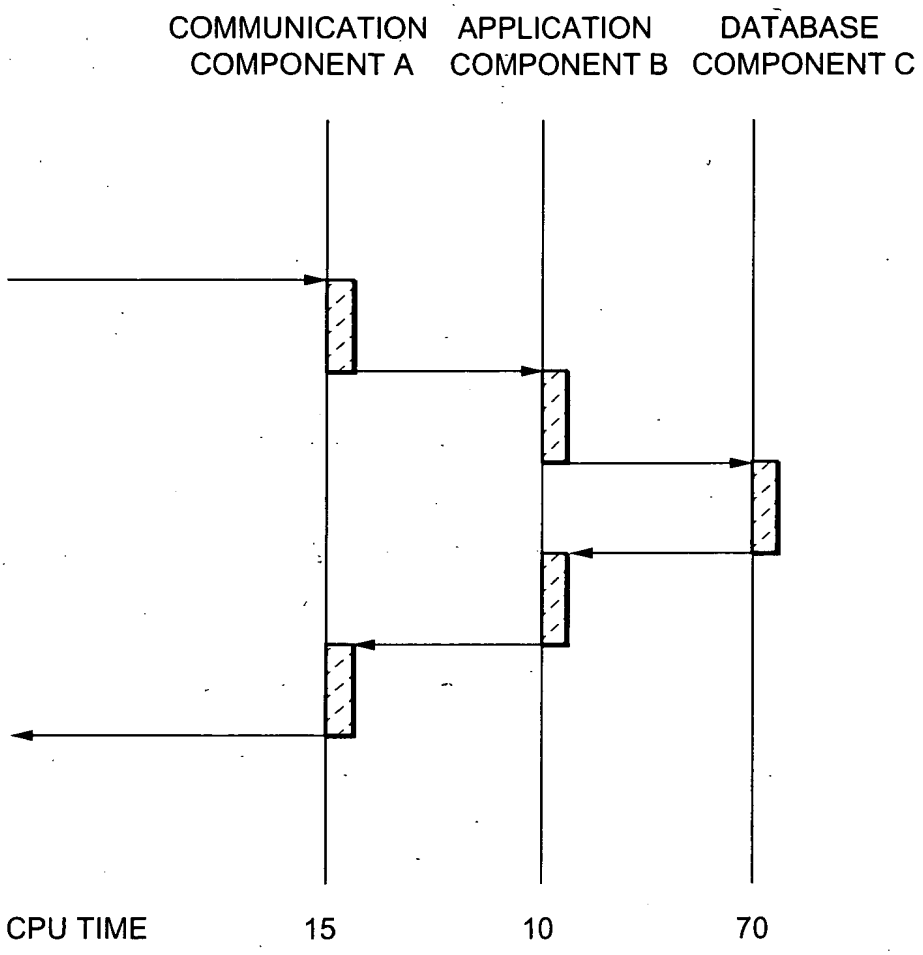

COMMUNICATION COMPONENT A
APPLICATION COMPONENT B
DATABASE COMPONENT C
CPU TIME
15
10
70

FIG. 13

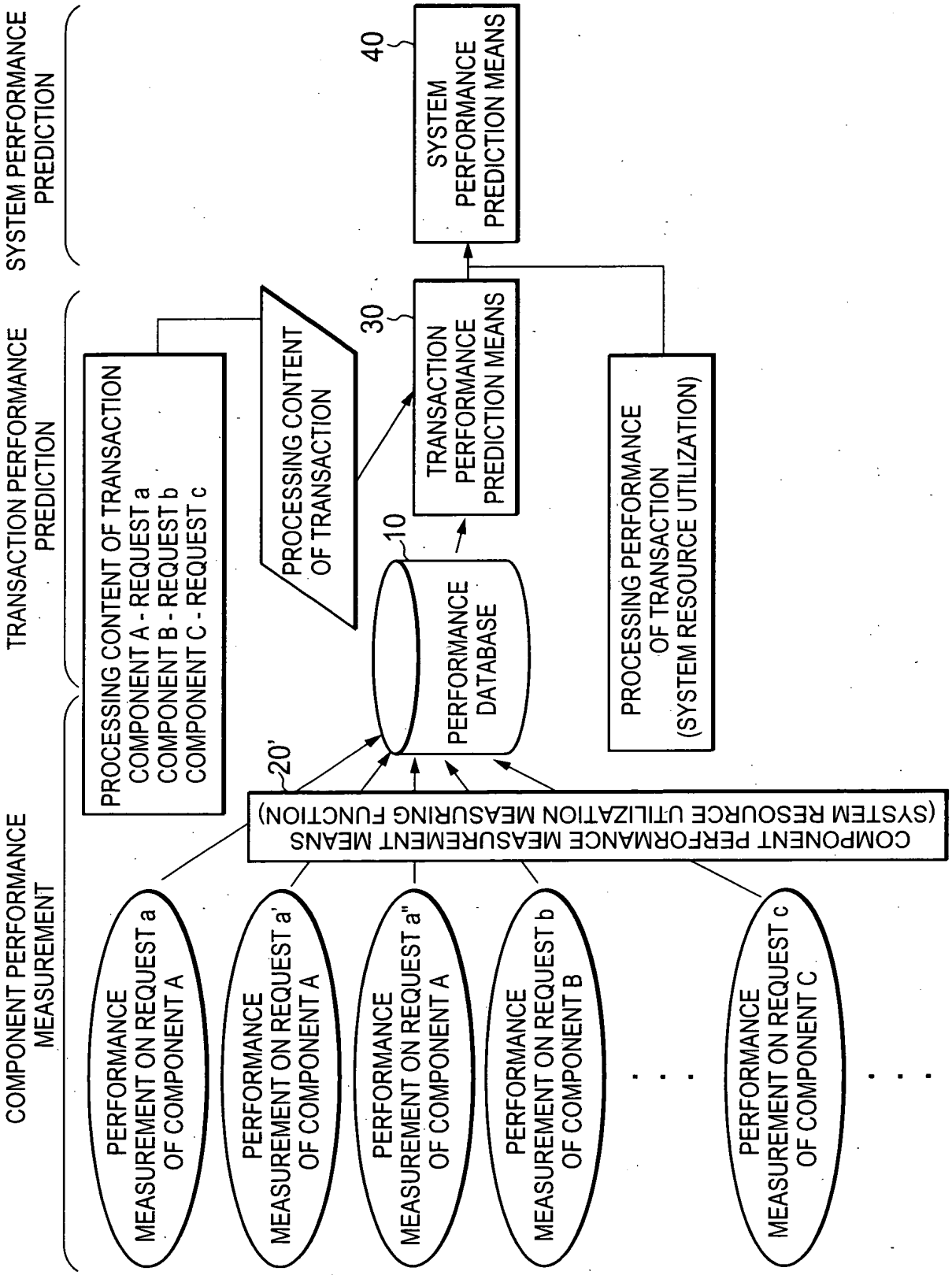

COMPONENT PERFORMANCE MEASUREMENT
TRANSACTION PERFORMANCE PREDICTION
SYSTEM PERFORMANCE PREDICTION
PERFORMANCE MEASUREMENT ON REQUEST a OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST a' OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST a'' OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST b OF COMPONENT B
PERFORMANCE MEASUREMENT ON REQUEST c OF COMPONENT C
COMPONENT PERFORMANCE MEASUREMENT MEANS (SYSTEM RESOURCE UTILIZATION MEASURING FUNCTION)
20'
PERFORMANCE DATABASE
10
PROCESSING CONTENT OF TRANSACTION
COMPONENT A - REQUEST a
COMPONENT B - REQUEST b
COMPONENT C - REQUEST c
PROCESSING CONTENT OF TRANSACTION
TRANSACTION PERFORMANCE PREDICTION MEANS
30
PROCESSING PERFORMANCE OF TRANSACTION (SYSTEM RESOURCE UTILIZATION)
SYSTEM PERFORMANCE PREDICTION MEANS
40

FIG. 14

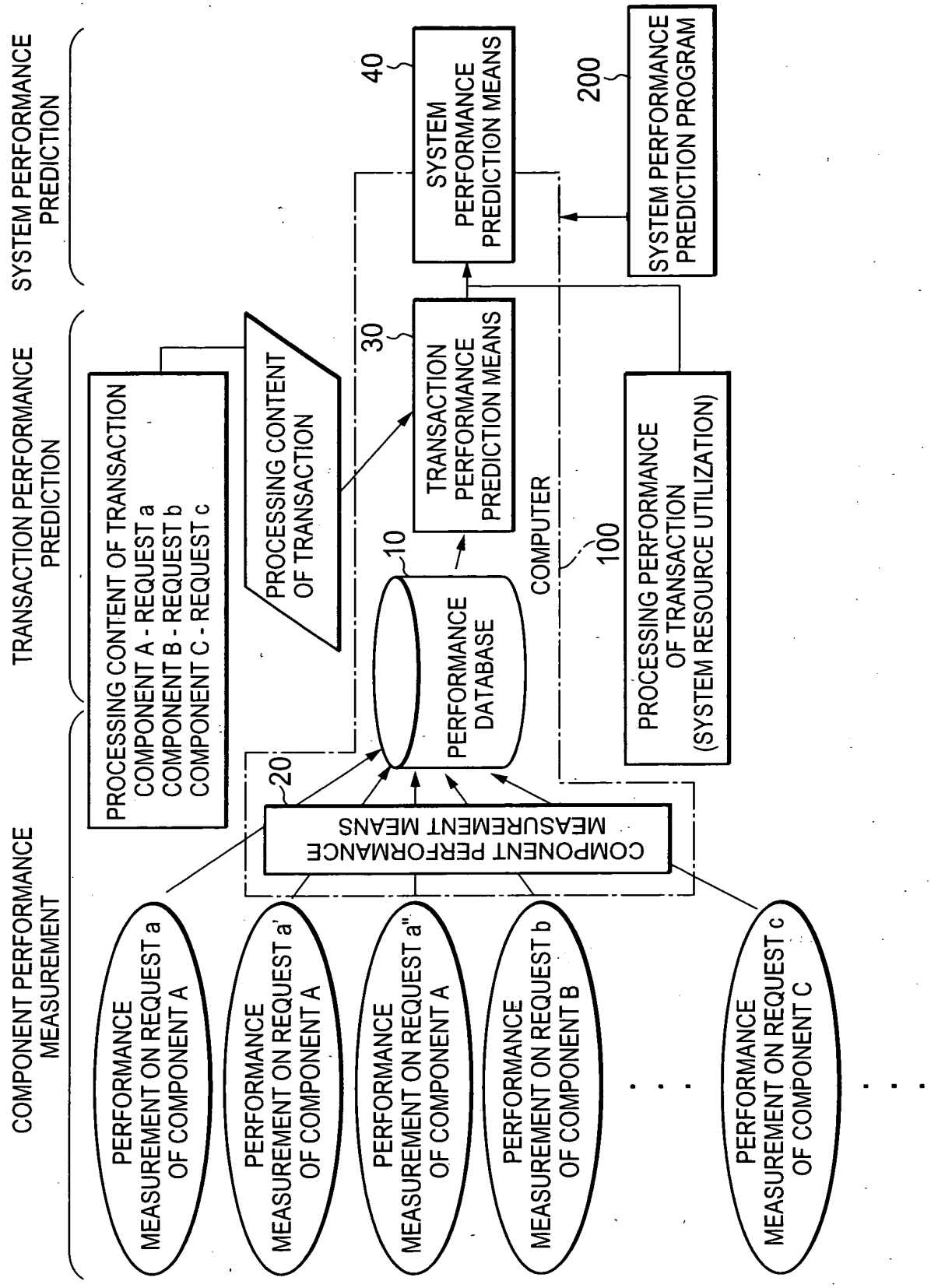
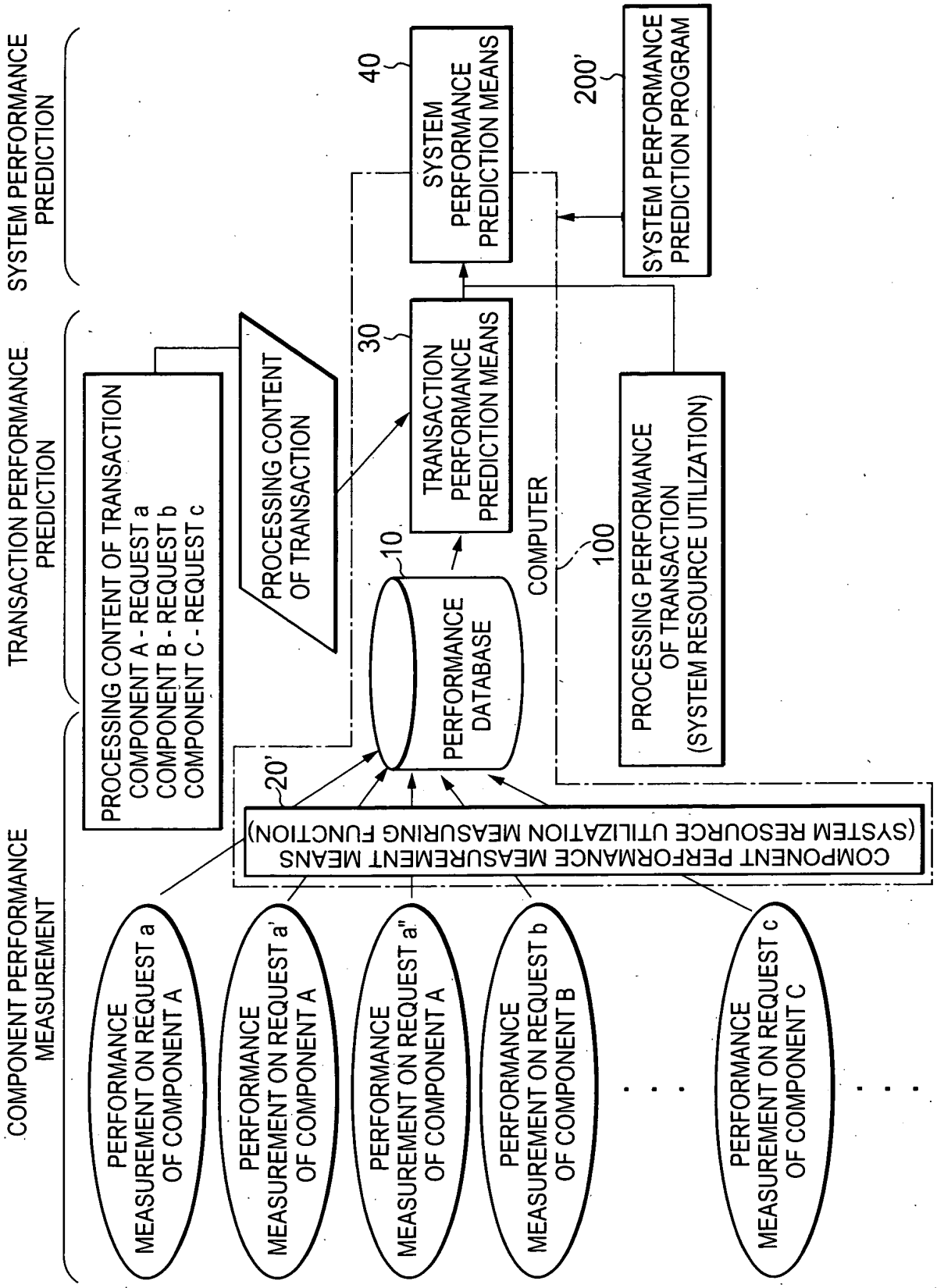

COMPONENT PERFORMANCE MEASUREMENT
TRANSACTION PERFORMANCE PREDICTION
SYSTEM PERFORMANCE PREDICTION
PERFORMANCE MEASUREMENT ON REQUEST a OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST a' OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST a" OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST b OF COMPONENT B
PERFORMANCE MEASUREMENT ON REQUEST c OF COMPONENT C
COMPONENT PERFORMANCE MEASUREMENT MEANS
20
PERFORMANCE DATABASE
10
PROCESSING CONTENT OF TRANSACTION
COMPONENT A - REQUEST a
COMPONENT B - REQUEST b
COMPONENT C - REQUEST c
PROCESSING CONTENT OF TRANSACTION
TRANSACTION PERFORMANCE PREDICTION MEANS
30
SYSTEM PERFORMANCE PREDICTION MEANS
40
COMPUTER
100
PROCESSING PERFORMANCE OF TRANSACTION (SYSTEM RESOURCE UTILIZATION)
SYSTEM PERFORMANCE PREDICTION PROGRAM
200

FIG. 15


COMPONENT PERFORMANCE MEASUREMENT
TRANSACTION PERFORMANCE PREDICTION
SYSTEM PERFORMANCE PREDICTION
PERFORMANCE MEASUREMENT ON REQUEST a OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST a' OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST a" OF COMPONENT A
PERFORMANCE MEASUREMENT ON REQUEST b OF COMPONENT B
PERFORMANCE MEASUREMENT ON REQUEST c OF COMPONENT C
COMPONENT PERFORMANCE MEASUREMENT MEANS (SYSTEM RESOURCE UTILIZATION MEASURING FUNCTION)
20'
PERFORMANCE DATABASE
10
PROCESSING CONTENT OF TRANSACTION COMPONENT A - REQUEST a COMPONENT B - REQUEST b COMPONENT C - REQUEST c
PROCESSING CONTENT OF TRANSACTION
TRANSACTION PERFORMANCE PREDICTION MEANS
30
SYSTEM PERFORMANCE PREDICTION MEANS
40
COMPUTER
100
PROCESSING PERFORMANCE OF TRANSACTION (SYSTEM RESOURCE UTILIZATION)
SYSTEM PERFORMANCE PREDICTION PROGRAM
200'